

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

UNITED ACCESS TECHNOLOGIES, LLC,

Plaintiff,

v.

CENTURYTEL BROADBAND SERVICES,
LLC and QWEST CORPORATION,

Defendants.

C.A. No. 11-339-LPS

UNITED ACCESS TECHNOLOGIES, LLC,

Plaintiff,

v.

AT&T INC., *et al.*,

Defendants.

C.A. No. 11-338-LPS

UNITED ACCESS TECHNOLOGIES, LLC,

Plaintiff,

v.

FRONTIER COMMUNICATIONS
CORPORATION,

Defendant.

C.A. No. 11-341-LPS

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MEMORANDUM OPINION



November 4, 2016

Wilmington, Delaware

STARK, U.S. District Judge:

On April 15, 2011, Plaintiff United Access Technologies LLC (“Plaintiff”) filed suit against Defendants AT&T Inc., *et. al.*, CenturyTel Broadband Services, LLC, *et. al.*, and Frontier Communications Corporation. alleging infringement of U.S. Patent Nos. 5,844,596 (“the ’596 patent”), 6,243,446 (“the ’446 patent”) and 6,542,585 (“the ’585 patent”) (together, “the patents-in-suit”). The patents-in-suit are directed to systems for transmitting data to residences or businesses over existing telephone wiring without interfering with telephone signals or the switching equipment that is part of the public switched telephone network (“PTSN”). All share the same specification.

The parties submitted technology tutorials and claim construction briefs. (D.I. 151, 154, 162, 166)¹ Defendants moved to strike several of Plaintiff’s claim constructions (D.I. 152), and the parties submitted briefing on that motion (D.I. 153, 156, 157, 158). The Court held a claim construction hearing on September 6, 2016. (*See* D.I. 171 (“Tr.”))

I. LEGAL STANDARDS

The ultimate question of the proper construction of a patent is a question of law. *See Teva Pharm. USA, Inc. v. Sandoz, Inc.*, 135 S. Ct. 831, 837 (2015) (citing *Markman v. Westview Instruments, Inc.*, 517 U.S. 370, 388-91 (1996)). “It is a bedrock principle of patent law that the claims of a patent define the invention to which the patentee is entitled the right to exclude.” *Phillips v. AWH Corp.*, 415 F.3d 1303, 1312 (Fed. Cir. 2005) (internal quotation marks omitted).

¹The references to the docket are to *United Access Technologies LLC v. CenturyTel Broadband Services LLC*, C.A. No. 11-339-LPS.

“[T]here is no magic formula or catechism for conducting claim construction.” *Id.* at 1324.

Instead, the court is free to attach the appropriate weight to appropriate sources “in light of the statutes and policies that inform patent law.” *Id.*

“[T]he words of a claim are generally given their ordinary and customary meaning . . . [which is] the meaning that the term would have to a person of ordinary skill in the art in question at the time of the invention, i.e., as of the effective filing date of the patent application.” *Id.* at 1312-13 (internal citations and quotation marks omitted). “[T]he ordinary meaning of a claim term is its meaning to the ordinary artisan after reading the entire patent.” *Id.* at 1321 (internal quotation marks omitted). The patent specification “is always highly relevant to the claim construction analysis. Usually, it is dispositive; it is the single best guide to the meaning of a disputed term.” *Vitronics Corp. v. Conceptronic, Inc.*, 90 F.3d 1576, 1582 (Fed. Cir. 1996).

While “the claims themselves provide substantial guidance as to the meaning of particular claim terms,” the context of the surrounding words of the claim also must be considered. *Phillips*, 415 F.3d at 1314. Furthermore, “[o]ther claims of the patent in question, both asserted and unasserted, can also be valuable sources of enlightenment . . . [b]ecause claim terms are normally used consistently throughout the patent” *Id.* (internal citation omitted).

It is likewise true that “[d]ifferences among claims can also be a useful guide For example, the presence of a dependent claim that adds a particular limitation gives rise to a presumption that the limitation in question is not present in the independent claim.” *Id.* at 1314-15 (internal citation omitted). This “presumption is especially strong when the limitation in dispute is the only meaningful difference between an independent and dependent claim, and one party is urging that the limitation in the dependent claim should be read into the independent

claim.” *SunRace Roots Enter. Co., Ltd. v. SRAM Corp.*, 336 F.3d 1298, 1303 (Fed. Cir. 2003).

It is also possible that “the specification may reveal a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess. In such cases, the inventor’s lexicography governs.” *Phillips*, 415 F.3d at 1316. It bears emphasis that “[e]ven when the specification describes only a single embodiment, the claims of the patent will not be read restrictively unless the patentee has demonstrated a clear intention to limit the claim scope using words or expressions of manifest exclusion or restriction.” *Hill-Rom Servs., Inc. v. Stryker Corp.*, 755 F.3d 1367, 1372 (Fed. Cir. 2014) (quoting *Liebel-Flarsheim Co. v. Medrad, Inc.*, 358 F.3d 898, 906 (Fed. Cir. 2004)) (internal quotation marks omitted).

In addition to the specification, a court “should also consider the patent’s prosecution history, if it is in evidence.” *Markman v. Westview Instruments, Inc.*, 52 F.3d 967, 980 (Fed. Cir. 1995), *aff’d*, 517 U.S. 370 (1996). The prosecution history, which is “intrinsic evidence,” “consists of the complete record of the proceedings before the PTO [Patent and Trademark Office] and includes the prior art cited during the examination of the patent.” *Phillips*, 415 F.3d at 1317. “[T]he prosecution history can often inform the meaning of the claim language by demonstrating how the inventor understood the invention and whether the inventor limited the invention in the course of prosecution, making the claim scope narrower than it would otherwise be.” *Id.*

In some cases, “the district court will need to look beyond the patent’s intrinsic evidence and to consult extrinsic evidence in order to understand, for example, the background science or the meaning of a term in the relevant art during the relevant time period.” *Teva*, 135 S. Ct. at 841. Extrinsic evidence “consists of all evidence external to the patent and prosecution history,

including expert and inventor testimony, dictionaries, and learned treatises.” *Markman*, 52 F.3d at 980. For instance, technical dictionaries can assist the court in determining the meaning of a term to those of skill in the relevant art because such dictionaries “endeavor to collect the accepted meanings of terms used in various fields of science and technology.” *Phillips*, 415 F.3d at 1318. In addition, expert testimony can be useful “to ensure that the court’s understanding of the technical aspects of the patent is consistent with that of a person of skill in the art, or to establish that a particular term in the patent or the prior art has a particular meaning in the pertinent field.” *Id.* Nonetheless, courts must not lose sight of the fact that “expert reports and testimony [are] generated at the time of and for the purpose of litigation and thus can suffer from bias that is not present in intrinsic evidence.” *Id.* Overall, while extrinsic evidence “may be useful” to the court, it is “less reliable” than intrinsic evidence, and its consideration “is unlikely to result in a reliable interpretation of patent claim scope unless considered in the context of the intrinsic evidence.” *Id.* at 1318-19. Where the intrinsic record unambiguously describes the scope of the patented invention, reliance on any extrinsic evidence is improper. *See Pitney Bowes, Inc. v. Hewlett-Packard Co.*, 182 F.3d 1298, 1308 (Fed. Cir. 1999) (citing *Vitronics*, 90 F.3d at 1583).

Finally, “[t]he construction that stays true to the claim language and most naturally aligns with the patent’s description of the invention will be, in the end, the correct construction.” *Renishaw PLC v. Marposs Societa’ per Azioni*, 158 F.3d 1243, 1250 (Fed. Cir. 1998). It follows that “a claim interpretation that would exclude the inventor’s device is rarely the correct interpretation.” *Osram GmbH v. Int’l Trade Comm’n*, 505 F.3d 1351, 1358 (Fed. Cir. 2007) (quoting *Modine Mfg. Co. v. U.S. Int’l Trade Comm’n*, 75 F.3d 1545, 1550 (Fed. Cir. 1996)).

II. MOTION TO STRIKE

Defendants have moved to strike (D.I. 152) Plaintiff's proposed constructions for "signal interface," "telephone exchange," and "telephone voice band," as well as Plaintiff's position that the preambles of the asserted claims are not limiting. Defendants' arguments are based on the claim construction decision in *United Access v. EarthLink, Inc.*, No. 02-cv-272-MPT (D. Del.), an earlier case in which Plaintiff's predecessor-in-interest asserted the patents-in-suit. There, Magistrate Judge Mary Pat Thyng construed several of the same claim terms that are at issue in this case. (*See id.* at D.I. 614; *see also Inline Connection Corp. v. AOL Time Warner Inc.*, 302 F. Supp. 2d 307, 320-34 (D. Del. 2004)) Defendants argue that collateral estoppel bars Plaintiff from re-litigating those constructions because: they formed the basis of Judge Thyng's decision to grant partial summary judgment; Plaintiff's predecessor appealed several of the claim constructions and the partial summary judgment decision; and the Federal Circuit summarily affirmed the Court's rulings. (D.I. 153 at 1-3; D.I. 154 at 7) Defendants raised these arguments in their claim construction brief, and in a separate Motion to Strike. Plaintiff responded to the arguments in its own claim construction briefing and in separate briefing on the Motion to Strike.

In order to fully consider Defendants' Motion and other arguments relating to estoppel, the Court found it necessary to review in their entirety all of Plaintiff's arguments regarding the disputed terms. After doing so, the Court determined that none of these arguments provided a persuasive reason for the Court to depart from Judge Thyng's claim constructions. Therefore, Defendants' Motion to Strike (D.I. 152) will be DENIED as moot.

III. CONSTRUCTION OF DISPUTED TERMS

A. “signal interface” and “public trunk line”²

Plaintiff

signal interface: a device interposed at a point of convergence that is downstream from the telephone exchange and performs the recited functions of the incorporated circuitry

public trunk line: the term “public trunk line” does not appear in any claim terms. As a result, United Access contends that the Court should not construe the terms

Defendants

signal interface: a device interposed on the opposite end (i.e., the local side) of the public trunk line (as defined by the inventor in the patent) from the telephone exchange that performs the recited functions of the incorporated circuitry and prevents all non-telephone signals from traveling upstream from the signal interface to the telephone exchange

public trunk line: the inventor defined public trunk line in the patent as: “the telephone lines comprising the public telephone network”

Court

signal interface: a device interposed on the opposite end (i.e., the local side) of the public trunk line (i.e., the telephone lines comprising the public telephone network) from the telephone exchange that performs the recited functions of the incorporated circuitry

The parties have two disputes regarding these terms. First, they disagree about whether a signal interface is necessarily located at the boundary of the telephone network and the private, local network. Second, they disagree about whether the signal interface necessarily prevents all non-telephone signals from traveling upstream from the signal interface to the telephone exchange.

Initially, the parties disagree about whether the term “signal interface” has a plain and ordinary meaning to a person of skill in the art. (D.I. 162 at 12) Citing a computing dictionary,

²The term “signal interface” term appears in claim 61 of the ’596 patent; claims 1-3 of the ’446 patent; and claims 1, 2, 4, and 8 of the ’585 patent. The term “public trunk line” appears in Defendants’ construction of “signal interface.”

Plaintiff argues that the plain and ordinary meaning of “interface” is a “common boundary and links between two systems, devices or programs” or “[t]he signal connection and associated control circuits that are used to connect devices.” (D.I. 151 at 17) Because neither definition specifies that an interface must be placed at a particular location, Plaintiff argues, imposing such a requirement via claim construction would improperly import limitations from the specification into the claims. (*Id.* at 15) Defendants disagree, arguing that the term “signal interface” does not have a plain and ordinary meaning to one of skill in the art, and that such a person would therefore turn to the specification to discern its meaning. (D.I. 162 at 12-13) The Court agrees with Defendants. Plaintiff has not described who it believes a person of ordinary skill in the art is, nor provided a persuasive argument that, for such a person, Plaintiff’s computing dictionary definition of “interface” reflects the plain and ordinary meaning of the term “signal interface.”

Turning to the specification, Defendants contend that it makes clear that the term “signal interface” refers to a device located at the interface of the public telephone network and a local network, and not merely “downstream” from a telephone exchange.³ The specification describes the invention as a whole as a means of transmitting signals between networks of telephone wiring and a high capacity communication line, with the transmission occurring “at a common point of access” to the high capacity line where the networks of telephone wiring “converge.” *See* ’596 pat. col. 1:23-28. The patent states that the invention includes a device located at this point of convergence. *Id.* at 1:62-2:6; *see also* 3:48-55, 4:53-55, 8:9-18, 8:62-9:6. It is undisputed that the specification does not teach the use of a signal interface at another location on the public

³This is consistent with the *EarthLink* Court’s construction. *See Inline Connection Corp.*, 302 F. Supp. 2d at 321-324.

telephone network. (D.I. 154 at 11-12) Defendants argue that a person of ordinary skill in the art at the time of the invention would infer from this context that the “signal interface” of the claims must be located at the boundary of the public and local networks.

Plaintiff counters that the claims themselves make clear that the concept of a signal interface does not inherently include such a “positional” limitation because the asserted claims themselves include positional limitations. In Plaintiff’s view, these other limitations, rather than the term “signal interface” itself, specify what, if any, positional requirements the patentee intended to impose upon the claimed signal interfaces.

Claim language must be construed in the context of the claim as a whole. *IGT v. Bally Gaming Int’l, Inc.*, 659 F.3d 1109, 1117 (Fed. Cir. 2011). “Extracting a single word from a claim divorced from the surrounding limitations can lead construction astray.” *Id.* Considering each of the asserted claims as a whole, the Court concludes that each includes a limitation that the signal interface be located at the far end of the public trunk line, at the point where the line connects to the local telephone network. *See, e.g.*, ’596 pat. col. 76:24-26 (requiring “a signal interface coupled between the external source of information and the telephone wiring network”); ’446 pat. col. 70:21-22 (same); ’585 pat. col. 70:13-24 (describing use of “signal interface” designed to “receiv[e] . . . external signals” and to “transmit [those signals] . . . over the telephone wiring network”). Thus, even if Plaintiff is correct that a person of ordinary skill would understand that a signal interface is not *inherently* required to be located at the intersection of the public telephone lines and the lines that run separately to particular structures, the Court concludes that a person of ordinary skill in the art would understand that to be a

limitation imposed by the claims themselves.⁴ Thus, the Court construes the term signal interface and its accompanying positional limitations as requiring at least that the signal interface be interposed on the local end of the public trunk line.

Having resolved the positioning issue, the Court next considers whether a signal interface necessarily performs the function of preventing all non-telephone signals from traveling upstream from the signal interface to the telephone exchange. Defendants note that the specification of the patents-in-suit at times imputes this function to the signal interface. (D.I. 154 at 12-13) Further, Defendants suggest that the patentee's desire to impose a requirement that the signal interface prevent up-stream transmissions is evident from its citation of United States regulations that prohibit the transmission of high-frequency signals over telephone wires. (*Id.*) Plaintiff counters that some of the claims of the patents explicitly require the signal interface to prevent such upstream transmissions, suggesting that this capability is not an inherent feature of the signal interface itself. *See, e.g.* '596 pat. col. 69:41-44 (requiring signal interface include "circuitry for . . . preventing transmission of [non-telephone] signal to the telephone exchange").

The Court agrees with Plaintiff. Although Defendants cite prosecution history in favor of their interpretation, that history refers specifically to those claims that contain an explicit requirement that the signal interface block upstream data transmission, and therefore does not support their position that such blocking is an inherent property of "signal interface" claims without such an explicit limitation. (*See* D.I. 166 at 10; D.I. 154-9 at 24) While the prosecution history indicates that the claims that do not include an upstream transmission limitation (i.e.,

⁴Plaintiff contends that adopting such a construction would read out a preferred embodiment, i.e., Figure 1b of the '596 patent. Having reviewed the intrinsic evidence, the Court is persuaded by Defendants' interpretation of that figure. (D.I. 162 at 13-14)

'596 pat. cl. 61) include circuitry for preventing transmission of signals in the high-frequency band onto parts of the telephone wiring network, the patentee stated only that the embodiments of those claims could block signals to "telephone devices." (D.I. 154-9 at 29) In the context of the asserted patents, the term "telephone device" refers to devices employed by end users, and does not include within its scope the telephone exchange. *See, e.g.* '596 pat. col. 76:11-16 (claiming "system for communicating information . . . over a telephone wiring network used for passing telephone signals in a telephone voice band between a plurality of telephone devices and a telephone exchange"). Thus, while Defendants are correct that the specification makes clear why blocking upstream transmission would be an advantageous feature for a signal interface (because it would ensure that the claimed system satisfied then-pertinent legal requirements), that is an insufficient justification for reading a limitation from the specification into the claim. As such, the Court has not adopted this portion of the Defendants' proposed construction of "signal interface."

Given the reasoning above, there is no need to separately construe "public trunk line."

B. "telephone exchange"⁵

Plaintiff
telephone switching equipment including equipment within a central office or including a private branch exchange
Defendants
a switching center for connecting and switching phone lines
Court
a switching center for connecting and switching phone lines

⁵This term appears in claim 61 of the '596 patent; claim 1 of the '446 patent; and claim 1 of the '585 patent.

Defendants argue that the term “telephone exchange” refers to a central office that contains equipment for connecting and switching telephone lines. (D.I. 162 at 7) Plaintiff contends that the term “telephone exchange” refers only to the equipment for connecting and switching, such that the claims can encompass both an exchange located at a central office and a “private branch exchange” located on a subscriber’s premises. (*See* D.I. 166 at 5)

The intrinsic evidence makes clear that “telephone exchange” and “private branch exchange” have distinct meanings.⁶ The specification explains that public telephone wires run *from* the “public” or “local” telephone exchange *to* the “access points” to which users connect. *See* ’596 pat. at 9:1-8 (describing “local telephone exchange” as source of telephone wire pairs that form “the trunk line”); *see also id.* at 1:23-44. In some cases – for example, in the case of a wire running from an individual residence to a telephone pole – users connect to the access point directly. *Id.* In other cases, such as where there are multiple end users at a single location who wish to communicate both among themselves as well as with individuals located at external locations, individual lines first connect to a “private branch exchange,” which both routes calls within the location and connects to the public network. *Id.* Essentially, the private branch exchange allows users at the same location to communicate with each other without having to access the public telephone network. As the patent explains:

⁶With respect to this claim, the parties submitted competing expert declarations, which the parties then discussed at the claim construction hearing. (Tr. at 86-88, 92) Because the meaning of the term as used in the asserted patents is clear from the intrinsic evidence, however, the Court did not rely on the extrinsic evidence in evaluating the meaning of this term. *See Phillips*, 415 F.3d at 1317 (finding that, “while extrinsic evidence can shed useful light on the relevant art . . . it is less significant than the intrinsic record in determining the legally operative meaning of claim language” and describing decision to admit extrinsic evidence as matter of “sound discretion” of district court).

Commercial buildings . . . include locations where many telephone lines converge. Often, the individual wires leading to the various rooms of the building converge at what is called a “PBX,” or private branch exchange. Such an exchange is provided because considerable communication between rooms is required that is not, of course, economically provided by the public telephone exchange.

’596 pat. col. 6:46-52.

In arguing that the term “telephone exchange” refers to the “local exchange,” Defendants seek to limit the invention to embodiments in which the claimed system facilitates communications via a public exchange. Plaintiff argues that limiting the claims in this way would be improper because it would read out preferred embodiments that employ private branch exchanges, such as the embodiment outlined in Figure 1b of the patents’ specifications. The Court disagrees with Plaintiff. The requirement that the claimed system facilitate connections with a local exchange does not preclude the possibility that the system does so in conjunction with a public branch exchange. *See* ’596 pat. fig. 1b (showing “local exchange 475” connecting to “PBX 500” which in turn connects to “transceiver/switch 400” [the signal interface]). Conversely, the patent does not disclose an embodiment having only a public branch exchange but no connection to the local exchange.

The fact that the patent does not disclose an embodiment having no connection to a local exchange is not dispositive of the scope of the claims. *See Hill-Rom Servs., Inc.*, 755 F.3d at 1372. But the Plaintiff does not provide a persuasive explanation for why a person of ordinary skill in the art would have read the patent as claiming such an embodiment. Thus, the Court is left with the strong intrinsic evidence that the patentee used the term “telephone exchange” to refer to a “local exchange.” In contrast, the “public branch exchange” is consistently described as an “access point.” The Court finds that a person of ordinary skill in the art would understand

that the patentee used “telephone exchange” to refer to a local exchange (and the equipment therein) but not a public branch exchange.

C. “high frequency band of frequencies above the highest frequency of the telephone voice band,” “high frequency band,” “high band of frequencies”⁷

<p>Plaintiff frequencies above the telephone voice band between 0.25 MHZ and an undetermined upper limit (alternate construction: “frequencies above the telephone voice band”)</p>
<p>Defendants Indefinite. <u>If not indefinite:</u> including frequencies at or above 24 MHZ and excluding frequencies at or below 18 MHZ</p>
<p>Court frequencies above the telephone voice band between 0.25 MHZ and an undetermined upper limit</p>

The disputed terms appear together in the patents, such that “high frequency band above the voice band” provides antecedent basis for “high frequency band.”

The specifications of the patents explain the technical significance and function of the high-frequency band. When separate signals are sent over a single wire, each signal is assigned to a discrete range of frequencies. These ranges of frequencies, called “bands” or “channels,” make it possible to differentiate among the different signals sent over the wire. ’596 pat. col. 18:30-42; *see also id.* at 55:51-57. Therefore, the Court finds that the term “band” refers to “a range of frequencies.”

The parties do not dispute that the patent uses the term “voice band” to refer to the particular range of frequencies customarily used to carry telephone signals. The claim term requires the “high frequency band” of signals to be above the “voice band.” Consequently, the

⁷These terms appear in claim 61 of the ’596 patent; claims 1 and 3 of the ’446 patent; and claims 1 and 4 of the ’585 patent.

bottom end of the range of frequencies comprising the “high frequency band” must be higher than the top end of the “voice band.” *See id.* at 53:59-64, 55:13-17, 51:51-57, 56-27-30.

Defendants contend, and Plaintiffs do not contest, that “high-frequency” has no plain and ordinary meaning in the art. The specification provides considerable guidance regarding the meaning of “high frequency” in the context of the asserted patents. It explains that, for various technical reasons, it is desirable to minimize the frequency of the highest-frequency signal by placing it as close to the voice band as possible, without causing interference. *Id.* at 19:14-25. This suggests that the patentee used the term “high frequency” to highlight that the selected band must, at the very least, avoid interference with the voice band.

The specification also provides guidance as to the minimum frequency that could be considered a “high” frequency. The specification describes a particular group of preferred embodiments as placing the high-frequency band “just above the voice band.” *Id.* at 24:48-54. The specification lists specific examples of these embodiments. Of these, the minimum frequency at which the high-frequency signal is transmitted is 0.25 MHZ. From this, the Court understands that 0.25 MHZ is the lowest possible “high frequency” transmission (i.e. transmission that will not interfere with the voice band signal).

Defendants nevertheless argue that the claims are indefinite, citing various portions of the specification that describe certain frequencies as “low” or “high,” and noting that some of the disclosed “low” frequencies are higher than the “high” frequencies (and vice versa). But as Plaintiff’s answering brief explains at length, each such reference uses the terms “low” and “high” in a relative sense, characterizing a frequency as “low” or “high” in the context of the preferred embodiment being described, in the context of the technology at issue, or in

comparison to other preferred embodiments. (*See* D.I. 166 at 16-18) Accordingly, the Court finds that a person of ordinary skill in the art would understand that these examples of “low” and “high” are not meant to impose numerical limitations on the claims, but rather to distinguish and explain different preferred embodiments and describe the underlying science. As such, Defendants have not demonstrated by clear and convincing evidence that these references to “high” and “low” frequencies render the meaning of the “high frequency” claim terms uncertain to a person of ordinary skill in the art. *See Microsoft Corp. v. i4i Ltd. Partnership*, 564 S.Ct. 2238, 2242 (2011).

Defendants’ citations to prosecution history are similarly unpersuasive. Defendants point to a portion of the prior art in which the patentee distinguished its invention over two prior art references, Reichert and Camarata, which both describe filtering signals. The Reichert prior art discloses a filter that separates voice and data signals by preventing high-frequency signals from passing onto wiring, which filters signals of over 0.004 MHZ. The Camarata prior art filters signals of greater than 0.5 MHZ. The patentee distinguished its invention from these references by explaining that:

independent claim 61 recites a branch network of the telephone wiring network which includes circuitry for preventing transmission of signals in the high frequency band to a telephone device on a branch network. Neither Camarata nor Reichert disclose a wiring network with any sort of branches, nor any type of circuitry for preventing transmission of signals in the high frequency band onto portions of the wiring network.

(D.I. 154-9 at 29) Defendants argue that the patentee intended by these statements to highlight two, separate differences between its invention and the prior art: a distinction based on branching, and a distinction based on the presence of a low-pass filter.

While this would appear on its face to be a reasonable way to read the patentee's statement, a closer inspection of the references being discussed renders that interpretation implausible. Because the Reichert filter allows only the voice band to pass onto the wiring network (see the Court's construction of "telephone voice band," below), the patentee could not have credibly have argued that its invention was distinct from Reichert on the basis that Reichert did not include any circuitry for preventing transmission of signals in a high frequency band "above the voice band." As such, the patentee's statements are best understood as distinguishing the claimed invention from the prior art on the basis that the invention has *both* circuitry for filtering high frequency signals *and* a branch network. For this reason, the Court is not persuaded that the patentee's statements implicitly disclaim any particular groups of frequencies from the scope of the term "high frequency."

For the foregoing reasons, the Court adopts Plaintiff's proposed construction.

D. "telephone voice band"⁸

Plaintiff this term does not need further construction and the Court should not impose numerical limits on this term
Defendants band of frequencies of 0-4 kHz
Court band of frequencies of 0-4 kHz

The parties agree that a person of ordinary skill in the art would understand that the "voice band" refers to the frequencies used for ordinary telephone service. (*See* D.I.154 at 29; D.I. 151

⁸This term appears in claim 61 of the '596 patent; claim 1 of the '446 patent; and claim 1 of the '585 patent.

at 23) This understanding of the term is consistent with the intrinsic record. *See, e.g.*, '596 pat. col. 47:35-48. The parties further agree that it excludes frequencies sent at above 5 kHz, as the specification notes. *Id.* at 21:34-39.

The parties disagree about the precise range of the voiceband. Plaintiff argues that the Court should not “set numerical limitations” on the voice band, noting that various sources of evidence define the “voice band” differently. (D.I. 151 at 23-24) But the Court finds persuasive Defendants’ expert report, which explains that one of ordinary skill in the art at the time of the invention would have understood that “telephone voice band” refers to the range 0-4 kHz because, at the time the voice frequency range was known to be 0.3-3.4 kHz *and* it was known to be desirable to include a guard band around those frequencies. (See D.I. 162 at 21) This explanation reconciles the differences among the various intrinsic and extrinsic evidence Plaintiff cites in its brief (*see* D.I. 151 at 22-24) and is consistent with the construction to which the parties agreed in the *EarthLink* litigation. (See D.I. 154 at 28) Therefore, the Court adopts Defendants’ proposed construction.

E. “external source of information”⁹ and “external signals”¹⁰

Plaintiff

No construction necessary

⁹This term appears in claim 61 of the '596 patent; claim 1 of the '446 patent; and claims 1 and 8 of the '585 patent.

¹⁰This term appears in claim 61 of the '596 patent; claims 1 and 4 of the '446 patent; and claims 1 and 2 of the '585 patent.

Defendants

external source of information: a communication line separate from the communication lines that carry telephone signals between telephone devices and the telephone exchange (i.e., physically separate from the public trunk line)

external signals: signals from the external source

Court

external source of information: the provider of the non-telephone signals

external signals: non-telephone signals sent to the signal interface

The parties disagree about whether the signals from an “external source” must be transmitted to the claimed systems via a communication line that is physically separate from the line that carries telephone signals between telephone devices and the telephone exchange. Defendants argue that the external signals must be transmitted via a separate medium. They note that the specification discloses real-world embodiments that use a separate communication line, and that the descriptions of many embodiments state that external signals are not intended to communicate with the local telephone exchange. (D.I. 154 at 25)

Although the specification of the asserted patents discloses embodiments of the claimed invention with respect to which it would be technically impossible (or legally impermissible) to implement the claimed system such that the external signals are transmitted via the public telephone wires (i.e., the public trunk line), the Court is not persuaded that the patentee used the term “external source of information” to rule out that possibility. Rather, the patent appears to require nothing more than that the external signals be non-telephone signals, originating from a source other than the public telephone system. The Court has construed the term accordingly.

F. “telephone wiring network”¹¹

Plaintiff this term does not need further construction
Defendants a network of twisted pair wiring
Court a network of twisted pair wiring

The parties disagree about whether the telephone wiring network of the claims must be comprised of “twisted pair” wires. Plaintiff argues that the patentee understood that telephone signals may, but need not, be transmitted via twisted pair wiring. (D.I. 151 at 21-22) However, as Defendants point out, the patentee used the words “twisted pair” and “telephone wiring” synonymously throughout the specification, and consistently used different terms to identify other types of cables. (*See* D.I. 162 at 21-22 (citing intrinsic evidence)) Further, the specification explains that the patentee intended for the invention to be implemented over existing twisted pair copper wires. (*Id.*) Thus, a person of ordinary skill in the art would understand that the “telephone wiring network” of the claims refers to “twisted pair” wiring networks.

G. “signal interface including . . . circuitry for limiting transmission of the [internal signal / signals] in the high frequency band from the telephone wiring network to the telephone exchange”¹²

¹¹This term appears in claim 61 of the ’596 patent; claims 1-3 of the ’446 patent; and claim 1 of the ’585 patent.

¹²These terms appear in claim 1 of the ’446 patent and claim 1 of the ’585 patent.

Plaintiff

This term does not need further construction other than Court's construction (if any) of "signal interface," "high frequency band," "telephone wiring network," and "telephone exchange"

Defendants

the signal interface includes circuitry that prevents high frequency signals (as construed) from traveling upstream from the signal interface to the telephone exchange

Court

the signal interface includes circuitry that prevents high frequency signals (as construed) from traveling upstream from the signal interface to the telephone exchange

Plaintiff contends that no construction of this term is necessary, beyond the Court's construction of the other disputed claim terms it encompasses. However, because the Court's constructions of the terms "signal interface," "high frequency band," "telephone wiring network," and "telephone exchange" are consistent with Defendants' proposed constructions, the Court has adopted Defendants' proposed construction of this term as well.

H. "a telephone wiring network used for passing telephone signals in a telephone voice band between a plurality of telephone devices and a telephone exchange"¹³

Plaintiff

This term, which appears in the preambles of the asserted patents, is not limiting. It does not need further construction other than the Court's construction (if any) of "telephone wiring network," "telephone voice band," and "telephone exchange."

Defendants

The preamble of each asserted claim is a substantive limitation which must be considered in the infringement analysis.

Accordingly, "the telephone wiring network (as defined above) is used for passing telephone signals in the telephone voice band (as defined above) to the telephone exchange"

¹³This term appears in claim 61 of the '596 patent; claims 1-3 of the '446 patent; and claim 1 of the '585 patent.

Court

The preamble of each asserted claim is a substantive limitation which must be considered in the infringement analysis.

Accordingly, “the telephone wiring network (as defined above) is used for passing telephone signals in the telephone voice band (as defined above) to the telephone exchange”

Defendants ask the Court to find that portions of the claims’ preambles are limiting on the claims. The Court agrees that these portions of the claims are limiting, as they provide antecedent basis for the term “telephone wiring network” cited in the claims, and give “life, meaning, and vitality” to the claims by explaining what the telephone wiring network is (i.e., a network “used for passing telephone signals in a telephone voice band between a plurality of telephone devices and a telephone exchange”). *Catalina Mktg. Int’l, Inc. v. Coolsavings.com, Inc.*, 289 F.3d 801, 808 (Fed. Cir. 2002). Therefore, the Court adopts Defendants’ proposed construction.

III. CONCLUSION

The Court construes the disputed terms as explained above. An appropriate Order follows.